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## Students with (suspicion of) IG+ASD

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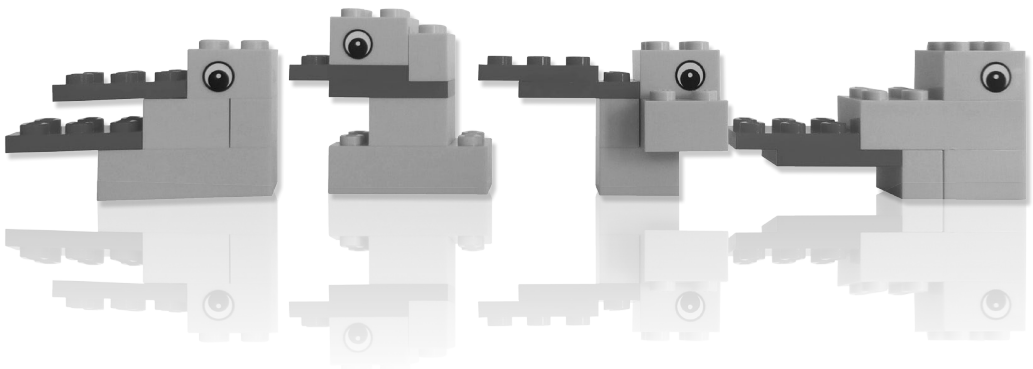
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# CHAPTER 5

## **Intellectually gifted students with possible characteristics of ASD: A multiple case study of psycho-educational assessment practices**

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## Abstract

The *Strengths and Weaknesses Heuristic (S&W Heuristic)* was constructed in order to reduce biased assessments of students with (suspicion of) Intellectual Giftedness in co-occurrence with Autism Spectrum Disorder (IG+ASD) and to establish a well-founded interconnection between assessment data and intervention indications. The current study is the second in the validation process of the *S&W Heuristic*. An in-depth analysis of three assessment dossiers of Dutch IG-students with possible characteristics of ASD is focused upon. The core question is whether the *S&W Heuristic* is of added value to diminish bias in any direction and increase systematicity. The results indicate that bias, mainly directed at Strengths, as well as unsystematicity were present in different stages of two assessment dossiers. The conclusion is that the *S&W Heuristic* seems to pave the way for systematicity and less bias in assessment processes of students with (suspicion of) IG+ASD.

**Keywords:** Needs-based assessment, Intellectual giftedness, ASD, Twice-exceptionality, Dimensional assessment

## Introduction

It was amply documented in psycho-educational literature that the connection between assessment data and interventions of students is rather unexplored in research and praxis (e.g. Brown-Chidsey, 2005; Tiekstra, Minnaert & Hessels, 2015). This applies in particular to students with (suspicion of) Intellectual Giftedness and an Autism Spectrum Disorder (IG+ASD) (e.g. Assouline, Foley Nicpon & Doobay, 2009; Foley Nicpon, Doobay & Assouline, 2010; Burger-Veltmeijer, 2007; Burger-Veltmeijer, Minnaert & Van Houten-Van den Bosch, 2011; Foley Nicpon, Allmon, Sieck & Stinson, 2011; Huber, 2007). Recently, Burger-Veltmeijer, Minnaert & Van den Bosch (2014) constructed a conceptual framework, called the Strengths and Weaknesses Heuristic (*S&W Heuristic*), in order to tune assessment outcomes of students with (suspicion of) IG+ASD with intervention indications in such a way that biased assessments, directed at either Strengths (Ss) or Weaknesses (Ws), could be reduced and that a well-founded interconnection between assessment data and intervention indications could be established. It might provide systematicity and coherence in both psycho-educational research and praxis, regarding assessments of students with (suspicion of) IG+ASD. Subsequently, it was evaluated whether assessments in psycho-educational practice were consistent with the theoretical principles of the *S&W Heuristic* (Burger-Veltmeijer, Minnaert & Van den Bosch, 2015), by means of a broad analysis of 36 assessment dossiers of Dutch intellectually gifted students (WISC-III-NL<sup>1</sup> Full-Scale IQ (FSIQ)  $\geq 130$ ). The results indicated the following: 1. The possibility of missed signals of ASD-characteristics among intellectually gifted students, which might indicate *biased* assessment performances. 2. A trend that assessments of intellectually gifted students with(out) characteristics of ASD might not be arranged according to the *systematic* dimensional nature of the *S&W Heuristic*. The aforementioned analysis did not specify what these possible *biased* performances and *unsystematic* dimensional nature looked like. Therefore, it was decided to do an in-depth analysis in order to empirically explain what remained rather unclear. Hence, this contribution provides a further step towards the empirical validation of the *S&W Heuristic*, by means of in-depth case descriptions of three assessment dossiers of Intellectually Gifted (IG) students who displayed signals of ASD-traits in the intake stage of their assessment procedure. Some core concepts will be elaborated hereafter in a nutshell. Interested readers can read more in the original publications of Burger-Veltmeijer et al. (2014, 2015), which are available on the internet.

### Needs-Based Assessment (NBA)

In the past two decades, publications on IG+ASD were merely based on clinical opinions and anecdotal case reports, and often discussed the problem of misdiagnoses and missed

diagnoses, due to (the masking effect of) mutual traits of both exceptionalities and to one-sided expertise of professionals (e.g. Barber, 1996; Burger-Veltmeijer, 2003; Cash, 1999; Donnelly & Altman, 1994; Gallagher & Gallagher, 2002; Grandin, 1992; Little, 2002; Neihart, 2000; Webb, Amend, Webb, Goerss, Beljan & Richard Olenchak, 2005). As from 2007, a few systematic empirical (case) studies were noticeable with or without controls (Assouline et al., 2009; Doobay, 2010, 2014; Huber, 2007; Foley Nicpon, Assouline, Schuler & Amend, 2011). These were aiming at the differentiation between intellectual giftedness with and without concomitant ASD conditions and thus primary served correct labelling, that is, classification-based assessment. However, this does not automatically bridge the gap between assessment and interventions. Contemporary psycho-educational studies try to overcome this gap and to address the student's needs. For instance by means of assessments for interventions (Brown-Chidsey, 2005) dynamic assessments (Tiekstra et al., 2015) or needs-based assessment (NBA, Pameijer, 2006). Especially needs-based assessment targets relevant risks as well as protective factors, such as Strengths and Weaknesses (S&Ws), concerning the individual students as well as the educational and home environment. Contrary to classification-based assessment, needs-based assessment is not aimed at diagnostic labelling, but rather at recommendations for educational and/or psychological interventions in order to address a student's Special Psycho-Educational Needs (SPENs) (Burger-Veltmeijer, 2014). According to Pameijer (2006), needs-based assessment looks for the 'goodness of fit' between the child's needs and the environmental provisions.

### **S&W Heuristic**

Since Twice-Exceptional (TE<sup>2</sup>) students, including students with (suspicion of) IG+ASD, may have very discrepant Strengths (Ss) and Weaknesses (Ws) (e.g. Cash, 1999; Chiang & Lin, 2007; Gilger & Hind, 2008), the S&W Heuristic of Burger-Veltmeijer et al. (2014) primarily serves needs-based assessment procedures. Needs-based assessment comprises several successive stages, differentiated as follows by Burger-Veltmeijer et al. (2014) and partly by Pameijer (2006): The *intake stage* includes anamnestic<sup>3</sup> data and initial questions<sup>4</sup>, gathered from parents or others. The *strategy stage* includes the justification of the assessment strategy, by means of a translation of intake information, including the initial questions, into alternative<sup>5</sup> hypotheses and investigation questions, which guide the assessment. The *investigation stage* includes assessment data, gathered from testing, observations, interviews and/or questionnaires. The *indication stage* includes the translation of assessment data into intervention indications. The *advice stage* includes the recommended interventions. The *evaluation stage* contains information on how or when the effects of the recommended interventions might be evaluated. Burger-Veltmeijer et al. (2014, 2015) theorised that bias in needs based assessments of students

with (suspicion of) IG+ASD might be reduced if assessments focus explicitly on the identification of both Strengths and Weaknesses in a systematic way throughout the whole assessment process: i.e. from intake stage, through strategy stage and investigation stage, to indication stage and, finally, advice stage. Biased assessment strategies might be reduced if alternative hypotheses and investigation questions are constructed by means of a systematic *translation* of intake data, that is Strengths as well as Weaknesses (Burger-Veltmeijer et al., 2015). This takes place in the strategy stage. Burger-Veltmeijer et al.(2015) found that in the strategy stage of 53% of their sample of 36 assessment dossiers, the intake information was not adequately translated into hypotheses and/or investigation questions. Biased intervention indications might be reduced if the assessment outcomes, that is the individual identified S&Ws, are *translated* per dimension into the individual student's (Special) Psycho-Educational Needs (SPENs), which are indications for interventions, before recommending the eventual psycho-educational interventions (Burger-Veltmeijer et al., 2014). This takes place in the indication stage. Burger-Veltmeijer et al. (2015) found that in the indication stage of 26% (9 out of 34) dossiers of their sample, assessment outcomes were not adequately translated into special psycho-educational needs or intervention indications. Both aforementioned translation moments seem to be crucial for potential bias and a lack of systematicity in needs-based assessment procedures.

### **IG and traits of ASD**

In line with Burger-Veltmeijer et al. (2014), we operationally defined intellectual giftedness as a Full-Scale Intelligence Quotient (FSIQ) of at least 130, in order to clearly differentiate IG+ASD from the general phenomenon 'high-functioning autism' which has an under limit IQ of about 80, as well as 'high ability' whose inclusion criteria often relate to lower FSIQs.<sup>6</sup> In all dossiers of the first validation study of the *S&W Heuristic* (Burger-Veltmeijer et al., 2015) the student's full-scale intelligence quotients were  $\geq 130$ . These authors found that characteristics out of the ASD-cluster *Inadequate reciprocal social interactions* were present in the intake stage in 65% (22 out of 34) of the assessment dossiers of IG-students. The dimensional nature of this cluster was ignored in 27% (6 out of 22) of these dossiers, however. This is not in accordance with the systematic dimensional principles of the *S&W heuristic*. Moreover, in a vast majority of the dossiers in which behaviours of the cluster *Inadequate reciprocal social interactions* were present in the intake stage, the diagnosticians mentioned neither the presence nor the absence of other ASD-related signals, such as stereotyped or restricted behaviours. Based on the aforementioned, Burger-Veltmeijer et al. (2015) concluded that there was a possibility of missed signals of ASD-characteristics among intellectually gifted students.

### **Purpose and questions**

The objective of this study is the continuation of the validation process of the *S&W Heuristic*, as initialised by Burger-Veltmeijer et al. (2015), by means of an in-depth multiple case study of assessment practices concerning IG-students with(out) characteristics of ASD. The core question is whether the *S&W Heuristic* is of added value to diminish bias and increase systematicity. Assessment dossiers were searched for the presence of: 1. *Bias*, that is one-sidedness in choices and translations, directed to either Strengths or Weaknesses; 2. *Systematicity*, that is the dimensional nature of thinking and justification from the intake stage to the advice stage, as theorised by Burger-Veltmeijer et al. (2014). The in-depth analysis was specifically focused on the two translation moments in respectively the strategy stage and the indication stage, since these seemed to be crucial for potential bias and lack of systematicity. Subquestions are:

1. What does it look like if the strategy stage reveals inadequate translations of intake data into alternative hypotheses and investigation questions?
2. Does the strategy stage unfold a lack of systematicity and/or presence of bias concerning the translation of anamnestic data into an assessment strategy?
  - a. Which hypotheses and/or investigation questions were formulated by the diagnostician and what intake information are these based on?
  - b. Which type of assessment instruments were chosen and on what basis?
3. If the aforementioned strategy stage reveals a lack of systematicity and/or presence of bias, does the indication stage reveal a lack of systematicity and/or presence of bias as well? That is, concerning the translation of investigation data into intervention indications and/or recommended interventions?
  - a. Are investigation data translated into special psycho-educational needs, systematically per dimension, that is per S and per W, as described in the *S&W Heuristic*?
  - b. Are any Strengths (Ss) and/of Weaknesses (Ws) ignored or interpreted in a one-sided way?

## **Method**

### **Design**

In line with the recommendations of Burger-Veltmeijer et al.(2015), the design of the current study is an in-depth analysis through comparative case descriptions. The aim was to investigate whether the principle of systematic dimensionality between assessment stages was present in three dossiers of IG-students with signals of the ASD-cluster *Inadequate reciprocal social interactions* in the intake stage.

### Case-study sample

In the sample of the study of 36 assessments of IG-students (WISC-III-NL FSIQ  $\geq 130$ ) of Burger-Veltmeijer et al. (2015) ten dossiers revealed signals of *Inadequate reciprocal social interactions* in the intake stage *as well as* inadequate translations of intake data into alternative hypotheses and investigation questions. Out of these ten we randomly selected three dossiers stemming from different organisations.

### Procedure

These three dossiers were analysed comprehensively regarding the details and nuances most relevant in understanding the principle of systematic dimensionality between the various assessment stages, i.e. the presence or absence of *bias* and *systematicity*. In the investigation stages of all three case descriptions, the quantitative scores and qualitative values were arranged per dossier in S&W Profiles, analogous to the S&W Profile of Burger-Veltmeijer et Al. (2014), and represented in three Tables. The scope of the 95% Confidence Intervals (CIs) of the various WISC-III-NL IQ-scores were represented by means of shaded cells in the Tables. If the extremes of an interval overlapped an adjacent cell with only one or two IQ-scores, then such adjacent cell was not shaded, since it might add little to clinical significance of essential differences standard deviations (sd's) and obscure the visual global function of the S&W Profile. Unlike the S&W Profile of Burger-Veltmeijer et al. (2014), we added the column of  $\geq 3$  sd, which represents a rather virtual illustration of a part of some confidence intervals, since the WISC-III-NL does not provide IQs nor confidence interval scores  $> 145$ . A column  $\leq 3$  sd was not added, because (virtual) scores in this area were not mentioned in the dossiers. We chose not to mention the exact scores of the confidence intervals, because this might obscure the aim of visual illustration of the S&W Profiles. We chose to divide the mean column in the Profile in two parts, because of the clinical significance of IQs below and above 100. Only the scores of the WISC-III-NL have been mentioned quantitatively, because a full scale IQ  $\geq 130$  on this test was an essential inclusion criterion. Scores of other tests, as well as approximate values of qualitative data, are indicated with an X in the corresponding cells of the S&W Profiles. confidence intervals of other tests are only added as far as mentioned in the dossier.



## Results

The three cases are described below, subdivided per assessment stage. Each case description is followed by an analysis on the basis of the aforementioned subquestions.

### **Dossier 1, Case Description**

#### *Intake stage*

Peter, a boy, aged eight years and ten months, grade 3, was referred for psychological evaluation at an institute specialised in assessing and counselling students with (suspicion of) giftedness, because he disliked school and complained of having no friends. The parents were concerned about their sons social development. The problems started in grade 1. Peter changed school a few months before the assessment. The parents reported good cognitive functioning and overall high grades at school (highest 25%) but trouble with memorising. In addition, the parents reported the following: At baby age, Peter needed much physical contact before he could come to rest. At preschool age, Peter was an active and lively child, he had original ideas, he assembled large jig saw puzzles, he had difficulty interacting with other children and wanted to do his own thing. Peter was caring for babies. At present, Peter shows failure anxiety and does not want to practise anything in order to master it. Peter likes to play with technical and construction toys, he dislikes playing outdoors. He has an aversion to mint (toothpaste) and labels in clothing, he cannot concentrate when it itches. Periodically, Peter has difficulty falling asleep, complaining of pressure in his head and subsequent trouble concentrating. Peter has fears and nightmares. The current teacher writes in a short note that Peter has trouble to sit still and concentrate. He takes challenging tasks seriously and performs them enthusiastically. If he gets an unchallenging task, he demonstrates this immediately loud and clear. Peter finds it difficult to put himself into other children's positions. The parents reported that the former school mentioned Autism sometimes whereas the current school thinks of Giftedness. In the intake stage the parents initial question was: Is our son gifted, and how can parents and teachers support him in this matter? Possible initial question(s) of the teacher or relevant others were not reported in the dossier.

#### *Strategy stage*

The diagnostician reported the following in the strategy stage: Peter was referred for assessment by his parents, because the school recognised characteristics of giftedness. The parents asked what Peter's intellectual capacities are and how parents and school should act in order to improve his emotional wellbeing.

*Investigation stage*

It was found that the diagnostician used instruments that aim at the following developmental dimensions: Intellectual capacities, Executive Functioning (EF), creative drawing, self-esteem, personality traits, level of ego development, behaviour questionnaire for gifted and talented children (filled in by parents and teacher), emotional development (projection test and observation in test situation). In Table 1 we put the quantitative and qualitative outcomes in a Profile of Strengths and Weaknesses (S&W Profile, S = Strength, W = Weakness), analogous to the design of Burger-Veltmeijer et al. (2014). Table 1 reveals relative strong Ss ( $\geq 2$  sd) regarding the overall and verbal intellectual capacities, Ss ( $\geq 1$  sd) regarding performance IQs and EF-planning and Ego development. Average levels of various functions of EF, self-esteem, personality traits and creative drawing. Relatively low average level of the WISC-III-NL factor 'speed of information processing' (which is more than 2 sd's lower than Peter's own level of verbal intelligence -including the 95% confidence intervals - and about 2 sd lower than his own performance intelligence). Moreover, Table 1 reveals a large discrepancy of at least 3 sd's between the highest and lowest subtest scores of the WISC-III-NL. Furthermore, Table 1 reveals (strong) Ws regarding executive function accuracy, impulsive work behaviour, social and overall self-esteem, neuroticism, social adequacy and non-agreeableness. In short, this profile indicates a large degree of disharmony between (verbal) intellectual functioning and various dimensions in the emotional and social realm and neurocognitive realm.

*Indication stage*

The diagnostician reports: Peter is capable of high achievements but seems to underachieve on tasks that require sequential perception of details. This seems to be related to Peter's surface-oriented task approach, because of which Peter overlooks his mistakes. Peter has a average level of information processing speed and creativity. Peter works impulsively and unsystematically on tasks. In the social-emotional realm, Peter has a somewhat negative self-perception, because he does not seem to feel accepted. Peter's level of ego development is above the average and this might explain why he experiences little social acceptance in his class. Peter dislikes school sometimes, because he misses challenges. Peter needs challenges in order to stay motivated.

**Table 1: S&W Profile of dossier 1**

Dossier 1, Peter	S&W Profile (in analogy to Burger-Veltmeijer et al., 2014, p. 221)					
	S +++ ≥ 3sd	S ++ ≥ 2sd	S + ≥ 1sd	S/ W + Ø -	W - ≤ 1sd	W -- ≤ 2sd
<b>WISC-III-NL (factor) IQs and subtests:</b>						
Full Scale IQ		138				
VIQ / VBF		143/144				
PIQ / POF			120/123			
PSF						94
<b>WISC-III-NL subtests:</b>						
Information, Similarities,	ss=19					
Arithmetic, Vocabulary, Block Design			ss=15			
Comprehension			ss=14			
Picture Completion, Object Assembly			ss=13			
Picture Arrangement				ss=12		
Digit Span				ss=11		
Coding				ss=10		
Mazes					ss=9	
Symbol Search					ss=8	
Raven Standard Progressive Matrices			X			
<b>Executive Functions (EFs)</b>						
EF planning (tower test)			X			
EF accuracy (tower test)					X	
EF speed				X		
Dynamic assessment, sorting task				X		
<b>Creativity</b>						
Creative drawing				X		
<b>Social-emotional questionnaires:</b>						
<i>Self esteem (W area = problematic functioning, i.e. low self esteem):</i>						
Self esteem learning				X		
Self esteem social						X
Self esteem sports				X		
Self esteem fysical				X		
Self esteem behaviour				X		
Self esteem overall						X
<i>Personality factors: (W area = problematic functioning)</i>						
Neuroticism						X
Perseverance ( conscientiousness)				X		
Social inadequate (introversion)					X	
Recalcitrant (non-agreeable)						X
Dominance (autonomy)				X		
Ego development (verbally, via sentence completion)			X			
<b>Qualitative data:</b>						
Projection techniques						
Observation during testing				Language and speech associative stories		Works impulsively, not methodically
<b>Questionnaires parents, teacher</b>						
Profiles of gifted and talented, parents:						Challenging, successful, autonomous learner
Profiles of gifted and talented, teacher:						Challenging, successful

Abbreviations: VBF = Verbal Factor IQ, POF = Perceptual Factor IQ, PSF = Processing Speed Factor IQ, S = Strength, W = Weakness, ss = standrd score

*Advice stage*

The diagnostician reports: Provide challenges by means of compacting the curriculum and enrichment tasks. Maybe let him study a foreign language. Give fewer compliments on results, and more compliments regarding the process. If he gets appreciation for starting a task, his motivation will improve.

**Dossier 1, Analysis***Translations in strategy stage*

The diagnostician did not translate the initial question of the parents into assessment questions, but rather copied the initial questions in the strategy stage. The diagnostician considered one hypothesis, which was not stated explicitly, but formulated rather implicitly, presupposing that the social and emotional problems might be related to intellectual giftedness. No alternative hypotheses were selected. The choice of the various assessment instruments was not explained, and showed no link with any hypothesis or investigation question, except for the intelligence tests. It did not become clear why the other instruments were chosen and what questions the outcomes were supposed to answer.

*Translations in indication stage*

The diagnostician's remarks in the indication stage seem to refer to some quantitative and qualitative investigation data (see Table 1). Some Strengths as well as Weaknesses are mentioned. It stays rather unclear, however, where each S or W stems from, except for the remark that Peter seems to underachieve on tests that require sequential perception of details. Moreover, the Strengths and Weaknesses are not described in terms of needs, except the overall need for *challenges* in order to stay motivated. It remains unclear which investigation data led to this overall need, possibly the combination of the Ss, that is the high intellectual capacities and the high level of ego development. The Weaknesses, that is the relatively lower speed of information processing relative to the other IQ-levels, as well as the low level of overall self-esteem and the high levels of neurotic and oppositional personality traits, seem to be interpreted by the diagnostician in a rather one-sided way, subordinated to the aforementioned Ss. Other possible causes or reasons were not discussed. More specifically, the diagnostician did not consider the following possible patterns in the investigation data (see Table 1): First, some (relative) Weaknesses might indicate some underlying (relative) deficit in information processing, which might need some extra consideration or even further assessment, these are: the relatively low speed of information processing compared to other IQ-scores, in combination with the low executive function accuracy and the rather impulsive task attitude. Second, Table 1 reveals a contradiction in the social realm between the high level ( $\geq 1$  sd) of ego

development and the lower levels of social adequacy ( $\leq 1$  sd), social self-esteem ( $\leq 1$  sd) and non-agreeableness ( $\leq 2$  sd). The diagnostician did not interpret these rather large differences, and thus ignored alternative interpretations, such as the possibility of an underlying (relative) deficit in applying social (verbal) knowledge in real live situations, as can be seen in some persons with characteristics of lesser variants or severity levels of ASD (e.g. APA, 2000, 2013; Serra, Minderaa & Jackson, 1999).

## **Dossier 2, Case Description**

### *Intake stage*

Quinn, a boy, aged seven years and two months, grade 1, was referred for psychological evaluation at a general Mental Health Institution, because he was different from peers and had trouble connecting with them, and he showed signs of giftedness. Quinn behaved overpowering towards other children, he was overactive and lively, it was sometimes impossible to get through to him. Furthermore, the parents reported inquisitiveness and curiousness from an early age, Quinn did not stop discussing and searching for compromises, and he felt misunderstood rather often. No school information was present in the dossier.

The parents asked for an assessment, because they suspected high intellectual capacities, which caused trouble connecting with peers.

### *Strategy stage*

The diagnostician reported no strategy after the intake stage. No hypotheses and no investigation questions were formulated. In the indication stage, the diagnostician reported that Quinn was referred for assessment because he had trouble connecting with peers.

### *Investigation stage*

Assessment instruments were a behaviour checklist (Child Behaviour Checklist, CBCL) filled in by the parents, an intelligence test (WISC-III-NL) and observations in the testing situation. The quantitative and qualitative outcomes were put in a S&W Profile, in Table 2 (S = Strength, W = Weakness). Table 2 reveals relative strong Ss ( $\geq 2$  sd) regarding the full-scale and verbal intellectual capacities, Ss ( $\geq 1$  sd) regarding performance IQs and the WISC-III-NL factor 'speed of information processing'. Moreover, Table 2 reveals a large discrepancy of 3 sd's between the highest and lowest subtest scores of the WISC-III-NL. Furthermore, a strong W ( $\leq 2$  sd) regarding Oppositional defiant behaviour (The 'W' area is representative for problematic functioning, the 'S' area is representative for well-functioning), and Ws ( $\leq 1$  sd) regarding aggressive behaviour, affective problems, physical problems, ADHD-like problems and behavioural problems.

The positive qualitative data, as observed in the testing situation, were: strong memory, curiousness, information absorption, working in a planned and structured way, sufficient social capacities and good eye contact. The negative qualitative data were: little patience, hyperactivity, constant talking and poor technical reading (the assessment took place at the end of the first grade after 9 months of reading education).

#### *Indication stage*

The diagnostician reported the following: Quinn stood out from early development because of inquisitiveness and curiousness, a fast language development and good vocabulary. Quinn was referred for assessment because he had trouble connecting with peers. The assessment reveals very high intellectual skills (full scale IQ >145). The lack of peer interactions might be caused by the fact that he has a higher cognitive level than his peers; he understands the world fast and is capable of learning new things fast. This means that he needs less instruction in education, less repetition of subjects, and that he has a high speed of task performance. Moreover, there will be a curriculum advance at school. If the curriculum will not be sufficiently attuned to Quinn's high learning potentials, he will not feel enough challenge. Observations show that he is eager to learn and understands things quickly. Sometimes he works too fast and makes mistakes and cannot be stopped, because he is too passionate.

#### *Advice stage*

The diagnostician reported the following: Attune the curriculum to Quinn's level and needs. He needs less time to complete the regular curriculum. Often, highly gifted children need challenging tasks, with a high level of abstraction and complexity. Quinn will need to practise learning strategies, just like other students. Give the opportunity for challenging things to do outside school (learning a foreign language and playing a musical instrument can be a good additions to school tasks). Do not treat him as an older child regarding his social skills, only because he has high cognitive capacities. Provide opportunities to contact children with likewise gifted potentials as well as children with average potentials. Additionally, the diagnostician mentioned a school and a psychologist which were specialised in giftedness.

**Table 2: S&W Profile of dossier 2**

Dossier 2, Quinn	S&W Profile (in analogy to Burger-Veltmeijer et al., 2014, p. 221)					
	S +++ ≥ 3sd	S ++ ≥ 2sd	S + ≥ 1sd	S/W + Ø -	W - ≤ 1sd	W -- ≤ 2sd
<b>WISC-III-NL (factor) IQs:</b>						
Full Scale IQ	145					
VIQ / VBF	145 /	144				
PIQ / POF			128 / 126			
PSF			124			
<b>WISC-III-NL subtests:</b>						
Information, Similarities, Vocabulary	ss=19					
Arithmetic, Comprehension, Block Design, Mazes		ss=17				
Picture Completion		ss=16				
Symbol Search			ss=15			
Coding			ss=13			
Object Assembly				ss=12		
Digit Span				ss=11		
Picture Arrangement				ss=10		
<b>Questionnaire parents:</b> (Behaviours with scores in the W area's are displayed. All other scores were in the normal range):						
<i>Child Behaviour Checklist (W area = problematic functioning):</i>						
Oppositional defiant behaviour (parents)						X
Aggressive behaviour					X	
Affective problems					X	
Physical problems					X	
Attention deficit / hyperactivity problems					X	
Behavioural problems					X	
<b>Qualitative data:</b>						
<i>Observation during testing</i>			Strong memory		Little patience	
			Curious		Hyperactivity	
			Absorbs information		Constant talking	
			Planned and structured way of working		Poor Reading	
			Good eye contact,			
			Sufficient social capacities			

Abbreviations: VBF = Verbal Factor IQ, POF = Perceptual Factor IQ, PSF = Processing Speed Factor IQ, S = Strength, W = Weakness, ss = standrd score

## Dossier 2, Analysis

### *Translations in strategy stage*

The diagnostician did not translate the initial question of the parents into assessment questions, nor considered any (alternative) hypotheses. The selection of assessment instruments was not substantiated.

*Translations in indication stage*

The Strengths and Weaknesses are neither systematically nor explicitly described in terms of needs. Except, implicitly the need for a compact and challenging curriculum. It remains unclear, however, where this need stems from. The diagnostician reports: ‘The lack of peer interactions might be caused by the fact that he has a higher cognitive level than his peers ... This means that he needs less instruction in education’. The problem with peer interactions seems to be interpreted by the diagnostician in a rather one-sided way, ascribed to the capability of high intellectual capacities. Other possible causes or reasons, such as the possibility of affective or behavioural disorders (see Table 2) were not discussed but rather ignored. The reason for assessment was that the boy had trouble connecting with peers. The assessment did not include instruments to investigate the social development, however.

**Dossier 3, Case Description***Intake stage*

Ronald, a boy, aged six years and two months, grade 1, was referred for psychological evaluation at an institute specialised in educational support, because of obtrusive, disruptive and negative behaviour, and little connection with other children. The problems began in kindergarten. Ronald shows impulsive and oppositional behaviour, he pushes other children and spits at them, he has trouble sitting still and listening, and he produces disturbing noises. He is bossy and has trouble cooperating. Ronald has strong cognitive capacities, and his motivation, task approach and attitude are sufficient. He is inquisitive, enthusiastic, enterprising and never bored. In 1<sup>st</sup> grade his school grades were good. The parents and teacher asked to do an intelligence test to assess Ronald’s talents and impediments. They also asked how Ronald’s behaviour can be explained and to find starting points for further directives. Furthermore the teacher asked to observe Ronald’s behaviour in the classroom.

*Strategy stage*

The diagnostician used the aforementioned initial questions of parents and teacher as investigation questions.

*Investigation stage*

It was found that the diagnostician used instruments that aim at the following developmental dimensions: Intellectual capacities, social behaviour and task commitment (observation in classroom and during testing) and social-emotional behaviours (questionnaire parents and teacher). In Table 3 we arranged the quantitative and qualitative outcomes in a S&W Profile (S = Strength, W = Weakness). Table 3 reveals



relative strong Ss ( $\geq 2$  sd) regarding the full-scale and verbal intellectual capacities. Ss ( $\geq 1$  sd) regarding performance IQs and verbal factor IQ. High mean scores regarding the speed of information processing. Moreover, Table 3 reveals a discrepancy of at least 2 sd's between the highest and lowest subtest scores of the WISC-III-NL. Furthermore, Table 3 shows rather a lot of Ws regarding social-emotional behaviours and task commitment. These are in disharmony with the high verbal and performance intelligence scores.

### *Indication stage*

The diagnostician reports that Ronald is a boy with cognitive capacities at a gifted level. His self-efficacy is insufficient in the classroom. This is due to several impediments that might cause or maintain the behavioural problems at school. These are: Ronald is functioning on a gifted level, the curriculum may not be challenging enough, so boredom is possible. Ronald shows large distractibility and attention deficit, particularly in the classroom, and is sensitive to auditory stimuli in the individual situation as well. Auditory information is processed superficially and is quickly forgotten. In the classroom Ronald needs constant supervision of the teacher in order to focus his attention on tasks. Ronald's motor restlessness and urge to move hinders him in his work. In unstructured situations, as well as during the day, the restlessness seems to be increasing. Ronald's (visual) information processing seems to be slow. His task approach is impulsive, Ronald is distracted by details, he can presumably not switch his attention, and shows perseverations. Ronald seeks contact with other children, but is not sufficiently able to adequately start or maintain the interaction. Because of his gifted level he may have little connection with children of his own intellectual level.

### *Advice stage*

The diagnostician mentioned: Ronald needs *curriculum* enrichment, which is challenging and suits his interest. Ronald requires compact *instruction* at the moment that he actually gets to work, and he needs to know the purpose of the lesson. He needs *tasks* that are offered one by one, then repeated after a few seconds, then he needs to be asked to repeat what he will do. The tasks need to be defined in quantity and time (how much work can you finish within 10 minutes?) and controlled with a time timer. He needs to be told specifically when to stop one task and start another. Visual task information about a task that he is not actually working on should be covered. He needs variation in thinking and doing. Ronald needs a *teacher* who makes clear behavioural agreements, says what she expects of him, avoids saying what she does not want, discusses the expected behaviours regularly, (e.g.: 'during the instruction I expect from you ...') and acts in accordance with the agreements, with clear consequences when Ronald does not stick to them.

**Table 3: S&W Profile of dossier 3**

Dossier 3, Ronald	S&W Profile (in analogy to Burger-Veltmeijer et al., 2014, p. 221)					
	S +++ ≥ 3sd	S ++ ≥ 2sd	S + ≥ 1sd	S/ W + Ø -	W - ≤ 1sd	W -- ≤ 2sd
<b>WISC-III-NL (factor) IQs:</b>						
Full Scale IQ		130				
VIQ / VBF		130	128			
PIQ / POF			120/119			
PSF				111		
<b>WISC-III-NL subtests:</b>						
Similarities		ss=16				
Information, Arithmetic, Block Design			ss=15			
Comprehension			ss=14			
Picture Arrangement			ss=13			
Coding, Symbol Search				ss=12		
Mazes				ss=11		
Digit Span, Picture Completion					ss=9	
<b>Questionnaires parents, teacher: (W area = problematic functioning; Only Ws are displayed, all other behaviours scored in normal range)</b>						
<b>Social Emotional Questionnaire teacher (SEV):</b>						
Adhd impulsivity						X
Autistic behaviour					X	
Oppositional defiant behaviour (parents)					X	
Aggressive behaviour					X	
Antisocial behaviour						X
Total conduct disorder						X
Social anxiety					X	
<b>Social Emotional Questionnaire parents (SEV):</b>						
Adhd attention deficit						X
Adhd hyperactivity						X
Adhd impulsivity						X
Adhd total						X
Autistic behaviour						X
Oppositional defiant behaviour (parents)						X
Aggressive behaviour						X
Antisocial behaviour						X
Total conduct disorder						X
General anxiety						X
Total score anxiety					X	
<b>Qualitative data:</b>						
<i>Observation in classroom</i>		Enjoys compliments			Low self efficacy, distracted attention, uncontrolled behaviour in less controlled situations (e.g. gymnastics); initiates social contacts at playtime but does not respond; repeats words from instruction, shows delayed reactions.	
<i>Observation during testing</i>		Active task initiation Can be motivated to continue work			Distracted by internal and external stimuli. Detailed conversation about computer games, Associative talk; Verbal and motor restlessness; perseveration answers. Sings/ makes sounds while working.	

Abbreviations: VBF = Verbal Factor IQ, POF = Perceptual Factor IQ, PSF = Processing Speed Factor IQ, S = Strength, W = Weakness, ss = standrd.score

Ronald needs a teacher who puts written rules and pictograms on Ronald's table, who exercises desired behaviour, rewards him for desired behaviour while she indicates what exactly was good, who indicates alternatives in case of undesired behaviour, and gives opportunities to move around on a regular basis. And Ronald needs classmates who function at the same cognitive level and who can show desired behaviour. Furthermore, the diagnostician referred for further psychological assessment at a Mental Health Institution.

### **Dossier 3, Analysis**

#### *Translations in strategy stage*

The diagnostician did not translate the initial questions of the parents into investigation questions, but used the initial questions as investigation questions. No (alternative) hypotheses or further (operational) questions were mentioned, neither was the selection of the investigation instruments substantiated.

#### *Translations in indication stage*

The investigation data were translated into special psycho-educational needs, rather systematically ascribed to the various Strengths and Weaknesses. Hardly any Strengths or Weaknesses seemed to be ignored. It remains rather unclear whether the social interaction problems were due to the absence of likewise peers, to the problems with attention regulation, or to having difficulties with starting and maintaining reciprocal social interactions. This dimension seemed to be interpreted rather superficially and possibly rather biased. Probably that is why the diagnostician referred for further diagnosis by another institution.

### **Summary**

In all three dossiers, the diagnosticians did not translate the initial questions of the parents into assessment questions. The initial questions were either (more or less) copied (dossiers 1 and 3) or not mentioned at all (dossier 2). Moreover, no alternative hypotheses were selected, and the selection of assessment instruments was not substantiated. Hence, the process of translation in the strategy stage, which connects the intake stage with the investigation stage, was done in a rather unsystematic way in all three dossiers, and, a biased way, directed at Strengths, in dossier 1. The process of translation in the indication stage, which connects the investigation stage with the advice stage, was performed in a rather biased way in dossiers 1 and 2. Mainly because the child's problems were one-sidedly related to the child's Strengths and alternative causes tended to be ignored.

Moreover, in dossiers 1 and 2, the Strengths and Weaknesses were neither systematically nor explicitly described in terms of needs. In dossier 3, however, the investigation data were rather systematically translated into special psycho-educational needs and ascribed to the various Strengths and Weaknesses in a rather unbiased way. In brief, bias and unsystematicity were present throughout the whole assessment process in two of the three dossiers, whereas in one dossier it was only present in the strategy stage.

## Conclusion and Discussion

In two of the three dossiers, bias and unsystematicity seemed to commence at the very beginning of the assessment processes, that is, in the strategy stage. This is because of one-sided translations or the absence of translations of intake data into hypotheses and/or investigation questions. Because of this, the assessment process lacks a leading systematic. This seemed to have resulted in haphazardly selected assessment instruments and/or one-sided interpretations of investigation data. In these two dossiers, investigation data were not, or only partly, translated into special psycho-educational needs. Interventions seemed to be recommended in a rather haphazard way, mostly stemming from a disproportionate translation of Strengths compared to Weaknesses. However, in one dossier the process of translation in the indication stage was done in a rather systematic and unbiased way, notwithstanding the rather unsystematic translation in the strategy stage. In the case of two of the three dossiers, the use of the systematicity of the *S&W Heuristic* might have prevented the diagnosticians from the rather unsystematic and biased translations in the indication stage of the assessment processes. Hence, the *S&W Heuristic* seems to pave the way for systematicity and less bias in assessment processes of students with (suspicion of) IG+ASD in the Netherlands.

### Limitations

The  $n=3$  construction of this study limits the generalisability of the conclusions. This study design was necessary, however, to concretize the idea of systematic continuous translations of data from intake stage through translation stage and investigation stage into indication stage.

### Implications

Apart from the two translation moments in the strategy stage and the indication stage, the three dossiers revealed some additional issues that seem to affirm bias and unsystematicity in the assessment processes: In some dossiers, the investigation questions revealed that the assessments were aimed at future actions of the teacher

or school. Nevertheless, the dossiers did not contain the following items: 1. A teacher report or quantitative evidence concerning school results. 2. Assessment of levels of school subjects by the diagnostician. 3. Observations of Peter's social or task behaviour in the school situation. 4. A behaviour questionnaire filled in by the teacher. Despite the absence of this information, the diagnostician indicated interventions for the school situation. Furthermore, in one dossier the student showed poor reading abilities. This did not ring a bell concerning possible (relative) reading problems, which might cause frustration of talent. Moreover, in all dossiers the intelligence profiles showed obvious inconsistencies and disharmony regarding subtest scores and/or IQ-scores, which were not discussed in relation to the social and behavioural problems. The diagnosticians could have performed or referred for some additional neuropsychological assessment regarding executive functions, central coherence and/or speed of information processing, in order to confirm or negate possible additional Weaknesses, which might cause frustration of talent.

Apart from the conclusion that two of the three analysed dossiers unfolded bias and unsystematicity, the aforementioned additional issues emphasize once more the need for systematicity in an assessment process, such as provided in the *S&W Heuristic*. Hence, research regarding the validity and usefulness of the *S&W Heuristic* in psycho-educational practice should be continued. Not only in the realm of IG+ASD, but also regarding Twice Exceptionalities (TE) in general.

The validation process of the *S&W Heuristic* might for instance be continued by means of problem-based learning situations. For instance by means of post-master courses for diagnosticians, in which they start to discuss their own casuistry. Then they learn the systematicity of the *S&W Heuristics*, and henceforward practice new casuistry according to these principles. Subsequently, the experiences could be evaluated in the group, and documented by the trainer. Afterwards the trainer might use the new insights to improve the *S&W Heuristic*. We think that before starting such courses, the *S&W Heuristic*, as constructed by Burger-Veltmeijer et al. (2014, pp. 221-222), could be transformed into a practice-friendly format. Moreover, the translation moment in the strategy stage should be visually emphasized, and in the case of (suspicion of) other Twice Exceptionalities, relevant dimensions should be added.

## Endnotes chapter 5

<sup>1</sup> Up to now, the WISC-III is still the commonly used intelligence test for children, in (special) education and mental health care in the Netherlands (WISC-III-NL). The WISC-IV was not adapted to the Dutch situation. The WISC-V will be translated and normed for the Dutch situation in the future.

<sup>2</sup> Twice-exceptionality (TE) refers to giftedness with coexisting disabilities, for instance specific learning disorders, like dyslexia, or developmental disorders such as Autism Spectrum Disorders (ASD) or Attention Deficit Hyperactivity Disorder (ADHD) (e.g. Burger-Veltmeijer et al. 2011; Foley Nicpon et al., 2011a).

<sup>3</sup> In this article, *anamnesis* and *anamnestic* refer to medical and psycho-educational and socio-economic case history, as well as the concerns and questions of parents and relevant others (such as teachers, paediatricians et cetera) as far as available in the intake stage of an assessment dossier.

<sup>4</sup> Initial questions reflect wishes and expectations regarding the assessment, such as ‘is this child gifted?’ (Burger-Veltmeijer et al., 2015, pp..). Initial questions often include presumptions (i.e. implicit hypotheses) concerning the explanation or solution of the problems. For instance, the initial question ‘is this child gifted’ might include the parent’s or teacher’s assumption that the learning or behavioural problems might be due to giftedness, and that this should be confirmed in order to get access to the solution of the problems. If the diagnostician assesses only this initial question c.q. hypothesis, alternative explanations or solutions might be overlooked and biased assessment might arise. Therefore the diagnostician should consider alternative hypothesis.

<sup>5</sup> Alternative hypotheses refer to the fact that the possible initial or most obvious presumptions of parents, relevant others or the diagnostician himself, might be supplemented with other more or less obvious possible explanations of, or solutions to, the child’s problems. For instance, if parents ask to assess whether the child’s underachievement results from giftedness, the diagnostician might also put forward alternative explanations, depending on what came forth in the intake stage; for instance problems in attention regulation or speed of information processing, learning problems, or executive dysfunction. The alternative hypotheses are translated from intake data and result into the investigation questions that lead the assessment.

<sup>6</sup> For instance Doobay et al. (2014) respectively Foley Nicpon et al. (2010) defined High Ability as a Full-scale *or* Verbal *or* Nonverbal Intelligence index score of respectively  $\geq 120$  or  $\geq 130$  *within* a 95% Confidence Interval (CI). This includes that either the individual Verbal or the individual Performance score or both (because of the 95% CI) might be well below 130. This induces the probability of inclusion of lower mean FSIQs of samples as well as the probability of larger disharmonies in IQ-profiles (and possibly partial IG) than the criterion FSIQ  $\geq 130$ , as utilized by Burger-Veltmeijer et al.(2014, 2015).

